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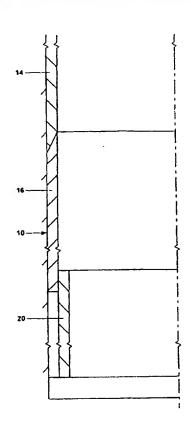
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[Continued on next page]

(54) Title: METHOD OF FORMING A MONO DIAMETER WELLBORE CASING



(57) Abstract: A method of forming a wellbore easing that includes positioning a first wellbore casing (14) within and coupling to a borehole (10), positioning a second wellbore casing (16) within the borehole that overlaps with and is coupled to the first wellbore casing (14), positioning a tubular liner (18) within the borehole that overlaps with and is coupled to at a least a portion of the second wellbore casing (16), extending the length of the borehole (10), decoupling the liner (18) from the second casing (16) and removing the liner from the borehole, and positioning a third wellbore casing (20) within the borehole that overlaps with and is coupled to the second wellbore casing (16).

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GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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- with international search report
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

AMENDED CLAIMS

[received by the International Bureau on 20 July 2004 (20.07.04); claims 21 to 30 added]

21. A method of forming a wellbore casing within a borehole that traverses a subterranean formation, comprising:

positioning a tubular liner within the borehole; extending the length of the borehole; removing the tubular liner from the borehole; positioning a wellbore casing within the borehole; and coupling the wellbore casing to the borehole.

22. A method of forming a wellbore casing within a borehole that traverses a subterranean formation, comprising:

positioning a first wellbore casing within and coupling the first wellbore casing to the borehole;

positioning a tubular liner within the borehole that overlaps with and is coupled to at least a portion of the first wellbore casing;

extending the length of the borehole;

decoupling the tubular liner from the first wellbore casing and removing the tubular liner from the borehole; and

positioning a second wellbore casing within the boychole that overlaps with and is coupled to the first wellbore casing.

23. A system for forming a wellbore easing within a berehole that traverses a subterranean formation, comprising:

means for positioning a tubular liner within the borehole;
means for extending the length of the borehole;
means for removing the tubular liner from the borehole;
means for positioning a wellbore casing within the borehole; and

means for coupling the wellbore casing to the borehole.

24. A system for forming a wellbore casing within a borehole that traverses a subterranean formation, comprising:

means for positioning a first wellbore casing within and coupling the first wellbore casing to the borehole;

means for positioning a tubular liner within the birehole that overlaps with and is coupled to at least a portion of the first wellbore easing;

means for extending the length of the borehole;

means for decoupling the tubular liner from the first wellbore easing and removing the tubular liner from the borehole; and

means for positioning a second wellbore casing within the borehole that overlaps with and is coupled to the first wellbore casing.

25. A method of forming a wellhore casing within a borehole that traverses a subterranean formation, comprising:

positioning a first wellbore casing within and coupling the first wellbore casing to the borehole;

positioning a second wellbore casing within the borehole that overlaps with and is coupled to the first wellbore casing;

preventing the second wellbore casing from collapsing;

extending the length of the borehole; and

positioning a third wellbore casing within the borehole that overlaps with and is coupled to the second wellbore casing.

26. A method of forming a wellbore casing within a borehole that traverses a subterranean formation, comprising:

preventing the borehole from collapsing; extending the length of the borehole; positioning a wellbore casing within the borehole; and

coupling the wellbore casing to the borehole.

27. A method of forming a wellbore easing within a borehole that traverses a subterranean formation, comprising:

positioning a first wellbore easing within and coupling the first wellbore easing to the borehole;

preventing the first wellbore casing from collapsing;

extending the length of the borehole; and

positioning a second wellbore casing within the borehole that overlaps with and is coupled to the first wellbore casing.

28. A system for forming a wellbore casing within a borehole that traverses a subterranean formation, comprising:

means for positioning a first wellbore casing within and coupling the first wellbore casing to the borehole;

means for positioning a second wellbore casing within the borehole that overlaps with and is coupled to the first wellbore easing;

means for preventing the second wellbore casing from collapsing;
means for extending the length of the borehole; and
means for positioning a third wellbore easing within the borehole that overlaps with and is
coupled to the second wellbore easing.

29. A system for forming a wellbore casing within a borehole that traverses a subterranean formation, comprising:

means for preventing the borehole from collapsing;
means for extending the length of the borehole;
means for positioning a wellbore casing within the borehole; and
means for coupling the wellbore casing to the borehole.

30. A system for forming a wellbore casing within a borehole that traverses a subterranean formation, comprising:

means for positioning a first wellbore casing within and coupling the first wellbore easing to the borehole;

means for preventing the first wellbore casing from collapsing;

means for extending the length of the borehole, and

means for positioning a second wellboxe casing within the borehole that overlaps with and is coupled to the first wellboxe casing.

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- (72) Inventor; and

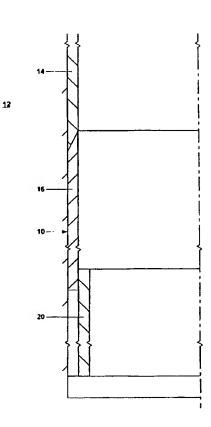
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- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,

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(54) Title: METHOD OF FORMING A MONO DIAMETER WELLBORE CASING



(57) Abstract: A method of forming a wellbore casing that includes positioning a first wellbore casing (14) within and coupling to a borehole (10), positioning a second wellbore casing (16) within the borehole that overlaps with and is coupled to the first wellbore casing (14), positioning a tuhular liner (18) within the borehole that overlaps with and is coupled to at a least a portion of the second wellbore casing (16), extending the length of the borehole (10), decoupling the liner (18) from the second casing (16) and removing the liner from the borehole, and positioning a third wellbore casing (20) within the borehole that overlaps with and is coupled to the second wellbore casing (16).

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14 October 2004

Declaration under Rule 4.17:

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INTERNATIONAL SEARCH REPORT

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PCT/US03/20870

. CLAS	SSIFICATION OF SUBJECT MATTER		
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US CL	: 175/171; 166/380, 207, 208 International Patent Classification (IPC) or to both na	tional classification and IPC	
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. DOC	UMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where ap	propriate, of the relevant passages	Relevant to claim No.
A	US 1,880,218 A (SIMMONS) 1 October 1930 (01.1	0.1930), Figures 3 and 4.	1, 3, 4, 6, 7, 11, 13,
Α	US 6,543,552 B1 (METCALFE et al) 8 April 2003 (08.04.2003), Figures 1-5.		14, 16, 17, 19, 20 1, 2, 11, 12
A	US 4,483,399 A (COLGATE) 20 November 1984 (20.11.1984), Figure 2.		1, 11
. A	US 6,598,678 B1 (SIMPSON et al) 29 July 2003 (29.07.2003). Figures 13 and 14.		1, 2, 11, 12
A	US 6,550,539 B2 (MAGUIRE et al) 22 April 2003 (22.04.2003), Figures 4a-4f.		1, 2, 11, 12
A	US 6,070,671 A (CUMMING et al) 6 June 2000 (06.06.2000), Figures 1-4.		3, 4, 6, 7, 9, 10, 13, 14, 16, 17, 19, 20
Furth	er documents are listed in the continuation of Box C.	See patent family annex.	
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